REMARKS

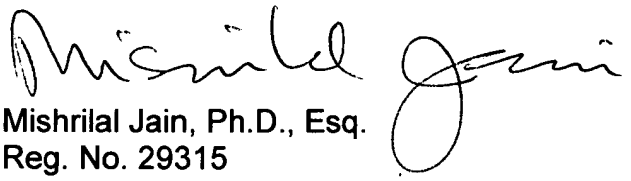
Claim 1 is pending in the application. New claims 2-16 have been added. Reconsideration of claims 1-16 is respectfully requested.

Claim 1 stands rejected under 35 U.S.C. 102 (b) as anticipated by *Fisher* cited by the Examiner. This rejection is respectfully traversed. It should be noted that a basic difference and distinction of the present invention vis-à-vis *Fisher* is that the present invention utilizes an **optrode**, whereas the cited reference has no teaching or disclosure of an optrode as defined in the specification of the present application. Hence, the rejection of the claims under 35 U.S.C. 102 (b) or 103 is inapplicable and this rejection should now be drawn.

The claims are believed to be in condition for allowance and favorable action accordingly is earnestly solicited. Should there remain any outstanding issues, a phone call from the Examiner is requested to discuss the same with a view toward furthering this application for allowance.

A clean copy of the claims is provided herewith.

Respectfully submitted,



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In the Claims

Please add new claims 2-16 and amend claim 1 as follows.

1(currently amended). An apparatus for analyzing, measuring and manipulating particles suspended in a liquid, gas or fluid having [[electromagnetic and optical]] properties different from that of the particles, as the fluid and particles move in a constricted [[volume along its longitudinal axis, and further comprising means for establishing and sensing an electromagnetic field in the constricted volume and means for making the fluid that is carrying the particles to flow through the orifice.]] path from a first fluid containir.g portion to a second fluid containing portion, the apparatus comprising:

a conduit creating a constraining path permitting fluid communication between the first and second fluid containing portions, said path having a longitudinal axis and said conduit defining a fluid constraining path in a direction along said longitudinal axis; and

a first pair of optrodes, said first pair of optrodes including a first optrode and a second optrode, said first and second optrodes being positioned in a non-encircling arrangement and defining a unique line therebetween, extending in a direction transverse to said longitudinal axis, wherein said line between said first and second optrodes extends in a direction substantially perpendicular to said longitudinal axis so that said optrodes when in active mode establish an electric, electromagnetic or an optical field in said constraining path and said optrodes when in passive mode measure the changes in said field due to the presence of the particle in the constraining path.

2 (new). The apparatus of claim 1, further comprising a second pair of optrodes, said second pair of optrodes including a third optrode and a fourth optrode, said third and fourth optrodes being positioned in a non-encircling arrangement and defining a unique line therebetween, extending in a direction transverse to said longitudinal axis so that said optrodes when in active mode establish an electromagnetic field or just an electric field or just an optical field in said constraining path and said optrodes when in passive mode measure the changes in said field due to the presence of the particle in the constraining path.

3(new). The apparatus of claim 2, further comprising a second pair of optrodes, said second pair of optrodes including a third optrode located in the first fluid containing portion and a fourth optrode located in the second fluid containing portion so that said optrodes when in active mode establish an electromagnetic field or just an electric field or just an optical field in said constraining path and said optrodes when in passive mode measure the changes in said field due to the presence of the particle in the constraining path.

4(new). The apparatus of claim 3, wherein the first and second pair of optrodes lies in substantially the same plane.

5(new). The apparatus of claim 1, wherein said conduit includes an internal wall surface, and said apparatus further includes a first aperture and a second aperture in said conduit's internal wall surface, said first and second apertures being substantially aligned and located on opposite sides of the conduit and defining a unique line therebetween, extending in a direction transverse to said longitudinal axis, wherein said first optrode is positioned in said first aperture and said second optrode is positioned in said second aperture, so that said optrodes when in active mode establish an electric, electromagnetic or an optical field in said constraining path and said optrodes when in passive mode measure the changes in said field due to the presence of the particle in the constraining path.

6(new). The apparatus of claim 2, further comprising a plurality of conduits each creating a corresponding distinct path for fluid communication between the first and second fluid containing portions, each of said paths having a longitudinal axis and said conduits defining a fluid constraining path in a direction along said longitudinal axis, wherein each of the conduit carries a pair of optrodes, said pair of optrodes including a first optrode and a second optrode, said first and second optrodes being positioned in a non-encircling arrangement and defining a unique line therebetween extending in a

7(new). The apparatus of claim 6, further comprising a plurality of conduits each creating a corresponding distinct path for fluid communication between the first and second fluid containing portions, each of said paths having a longitudinal axis and said conduits defining a fluid constraining path in a direction along said longitudinal axis, wherein each of the constraining paths further include a first aperture and a second aperture in said conduit's internal wall surface, said first and second apertures being substantially aligned and located on opposite sides of the conduit and defining a unique line therebetween, extending in a direction transverse to said longitudinal axis, wherein said first optrode is positioned in said first aperture and said second optrode is positioned in said second aperture, so that said optrodes when in active mode establish an electric, electromagnetic or an optical field in said constraining path and said optrodes when in passive mode measure the changes in said field due to the presence of the particle in the constraining path.

8(new). The apparatus of claim 2, wherein said conduit includes an internal cross-sectional area defined in a direction perpendicular to said longitudinal axis, said cross-section area changing between the first and second fluid containing portions.

9(new). The apparatus of claim 2, further comprising a controller, said controller being electromagnetically or optically coupled to all of said optrodes and establishing an optical or electromagnetic field across said optrodes coupled with

a signal analysis circuitry to monitor the change in optical or electromagnetic properties in the constraining path.

10(new). The apparatus of claim 9, further comprising an electroporation device, said electroporation device being electromagnetically coupled to electroporation optrodes establishing an electromagnetic field so that particles passing through the constraining path are subjected to high electric field or high optical field or high temperature in a localized volume due to the use of high electric field or lasers or a combination thereof, so that based on predetermined criteria some of the cells are electroporated or lysed.

11(new). The apparatus of claim 10, wherein certain optrodes are in active mode establishing an electromagnetic field in said constraining path while other optrodes are in passive mode measuring changes in said electromagnetic field with a controller device that switches said optrodes between an active and a passive mode.

12(new). The apparatus of claim 11, further comprising a second pair of optrodes located downstream from said first pair of optrodes, said second pair of optrodes including a third optrode and fourth optrode and defining a corresponding line between said third and fourth optrodes extending in a direction transverse to said longitudinal axis so that said optrodes when in active mode establish an electric, electromagnetic or an optical field in said constraining path and said optrodes when in passive mode measure the changes in said field due to the presence of the particle in the constraining path.

13(new). The apparatus of claim 12, further comprising an electroporation device, wherein said electroporation device is electromagnetically coupled to electroporation optrodes and establishes an electromagnetic field so that particles passing through the constraining path are subjected to high electric field or high optical field or high temperature in a localized volume due to the use of high electric field or lasers or a combination thereof, such that some of the cells based on a predetermined criteria are electroporated or lysed.

14(new). The apparatus of claim 13, further comprising a cell sorting means.

15(new). The apparatus of claim 14, wherein optrodes measure fluorescence of the particles.

16(new).The apparatus of claim 15, wherein optrodes measure light obstruction, forward scatter and side scatter due to the presence of the particles direction transverse to said longitudinal axis of corresponding conduit, said optrodes when in active mode establish an electric, electromagnetic or an optical field in said constraining path and said optrodes when in passive mode measure the changes in said field due to the presence of the particle in the constraining path.